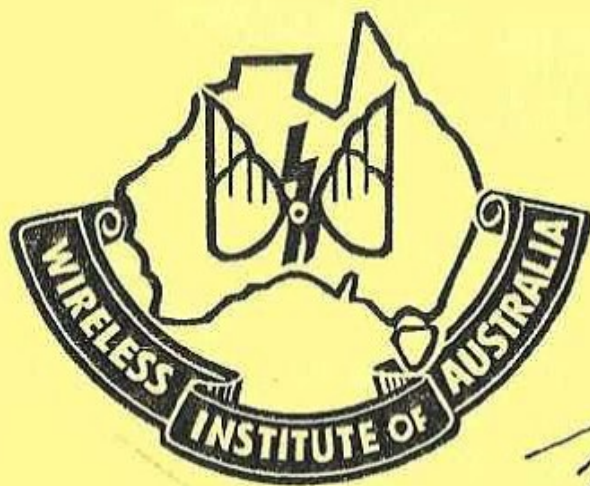
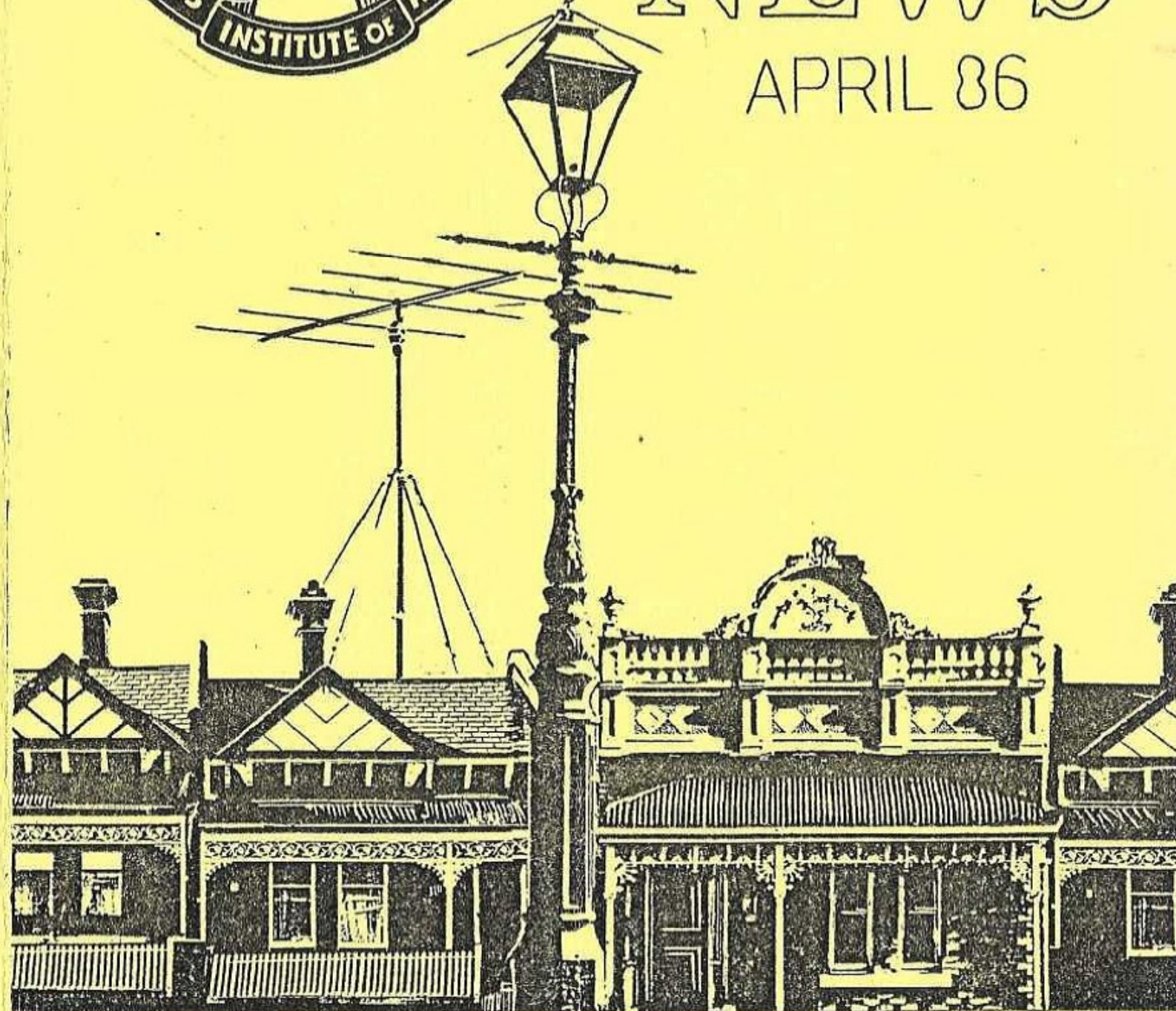


86/04 01



B·A·R·G NEWS

APRIL 86



© Monthly Newsletter of the
Ballarat Amateur Radio Group

86/04 02

COMMITTEE

B.A.R.G. OFFICERS 1985-1986

			<u>HOME</u>	<u>BUSINESS</u>
President.	Lou Iaquinto.	VK3 DFI	49 2200	Ext.241 After 4.30
Vice President	Geoff Smith.	VK3 ADB	32 1037	
Secretary	Jim Wright.	VK3 CFB	32 7563	
Asst. Secretary	Dick Forrester.	VK3 VU	35 7663	39 1001
Treasurer	Harry Hekkema.	VK3 KGL	35 7563	39 1001
Technical Officers	Phil Seddon	VK3 AQM	31 5220	31 3166
	Ian Robinson.	VK3 BTX	32 4139	
	Maurie Batt.	VK3 XEX	42 2245	
	Dick Antosiewicz.	VK3 AEX	32 3273	31 1818
S.L. Manager	Cliff Bilston.	VK3 PAF	35 8048	
Awards Manager	Maurie Batt.	VK3 XEX	42 2245	
Publicity Officer	John Hazledine.	VK3 CFH	39 1971	
Education Officer	Bob Terrill.	VK3 BNC	39 5317	39 1001
Property Officer	Dick Antosiewicz.	VK3 AEX	32 3273	31 1818
Newsletter Committee.	Dick Forrester.	VK3 VU	35 7663	39 1001
	Fred Quick.	VK3 NIH	32 3216	32 6455
	Ron Watkins.	VK3 XOA	35 6017	32 1447
	Henry Moritz.	VK3 DXC	35 5130	
Net Co-ordinator	Fred Quick.	VK3 NIH	32 3216	32 6455
I.C.E.N. Committee	Dick Antosiewicz.	VK3 AEX	32 3272	31 1818
	Geoff Smith.	VK3 ADB	32 1037	
	Dick Forrester.	VK3 VU	35 7663	39 1001
Committee	Neil Davidson.	VK3 KQQ	35 9812	
	Peter Kenyon.	L30037		
	Evonne Wroe.		42 4376	

B.A.R.G. Meets the LAST FRIDAY of every month at the
BALLARAT EDUCATION CENTRE, Hopetoun Street. at 7.30 p.m.
 All Correspondence to P.O. Box 216E Ballarat East. 3350 Vic.

Awards Manager, VK3-XEX, R.S.D. Rokewood Junction. Vic.

86/04 03

MINUTES OF GENERAL MEETING 21st MARCH 1986.

MEETING OPENED at 8.00pm by President Lou DFI who welcomed all members and visitors Gordon, Jim and Steven.

APOLOGIES XEX, YMW, NLR, DOK, VU, SE, NQQ, NIZ.

MINUTES of previous meeting as printed were confirmed. AXH/KQQ.

CORRESPONDENCE Letter of thanks from Light Car Club for assistance at Begonia Car Rally and donation of \$25.00.

Notice from M&DRC re Trade Display on April 5th.

TREASURERS REPORT General a/c \$701.54. VS&L a/c \$1131.01. BNC/PAF.

QSL MANAGER No cards received in previous month.

AWARDS 1 Goldrush, 1 Western Zone and 1 DX Widows.

CLUB NET. Fred KQF reported a good response to his appeal for more Club Member participation. Please keep it up.

PUBLICITY OFFICER John CFH reported on good publicity at Begonia Car Rally also with the Club Callsign on John Moyle Contest.

PROPERTY Dick AEX stated that all property is in good order with the exception of Dipole Antennas which are being overhauled by Bob BNC.

NEWS LETTER. MORE MATERIAL URGENTLY REQUIRED.

EDUCATION OFFICER Bob BNC is still looking for a suitable book on amateur radio to place in School Libraries.

REPEATER. The Micro-processor board for the new repeater has been constructed and the cavities are being polished.
A vote of thanks to George DKJ for his many hours of work constructing the cavities.

HAMVENTION Convener Murray AAI suggested that we have a specific theme for the Hamvention such as 'Satellite Communication' or 'Packet Radio' With equipment working in these modes to make the day more interesting. This suggestion was well received by the Members. Murray was also invited to attend Committee meetings to report on Hamvention progress.

CONTESTS President Lou reported a very successful John Moyle Contest with good D.X. contacts on 15 metres.
VK3 BML was top portable station in the state in the recent Remembrance Day contest. Congratulations to those who took part.

GENERAL BUSINESS. Cliff PAF spoke on lack of information on special International Year of Peace callsign IYP.
It was moved by ANX seconded BNC that secretary write to W.I.A. on this subject. Motion Carried.
It was moved by KQF seconded PAF that secretary write to W.I.A. Wicen Co-ordinator expressing opposition to WICEN taking over 3.610 mhz. as their frequency.
3.605 was suggested as an alternative.

MEETING CLOSED at 8.30pm and after a short break Andy DTO showed a Vidio on Satellites and a discussion was held on Satellite communications.

73s Jim CFB.

NEXT COMMITTEE MEETING 16th April.

NEXT GENERAL MEETING 18th April. Note changed date due to Anzac Day.

86/04 04

LADIES COMMITTEE

10th April. Meeting:- Karen Felstead. Ross Creek. 8p.m.

AGENDA:- Progressive Dinner.
Convention.

APOLIGIES:- Betty, Gwen, Yvonne.

PRESENT: - Karen, June, Fred.

GUEST SPEAKER:- Murray Felstead, 1986 Convention Convenor.

CONVENTION

Convenor had a talk with us about the Convention in November. Ideas put forward for a New Format. All to be discussed at our next meeting. JUNE 12th. Full attendance if possible please?

PROGRESSIVE DINNER. 28th June, 1986.

HOUSES

June & Dick Forrester's	-	Sherry & Savouries
Fred & Dickie Antosiewicz	-	Main Course
Karen & Murray Felstead	-	Sweets & Coffee
\$20 Double \$10 Single		

Details to be dicussed at next meeting June 12th.

Yvonne Wroe has resigned as President. As Karen Felstead is Vice President she will now take on the Presidents Roll.

We wish to thank Yvonne for her Leadership and Support given so willingly to the Club. We wish Yvonne and her family all the best for the future.

J. F. Secretary

FOR SALE.

YAESU FT 101E in very good condition
also Desk Microphone, Hand held Microphone
and Phone Patch Speaker. \$550.00
Contact Fred. VK3 KQF.

NEXT MEETING 18TH APRIL

MAY MEETING - JUNK SALE

*
* **MURPHY'S CORNER**
*

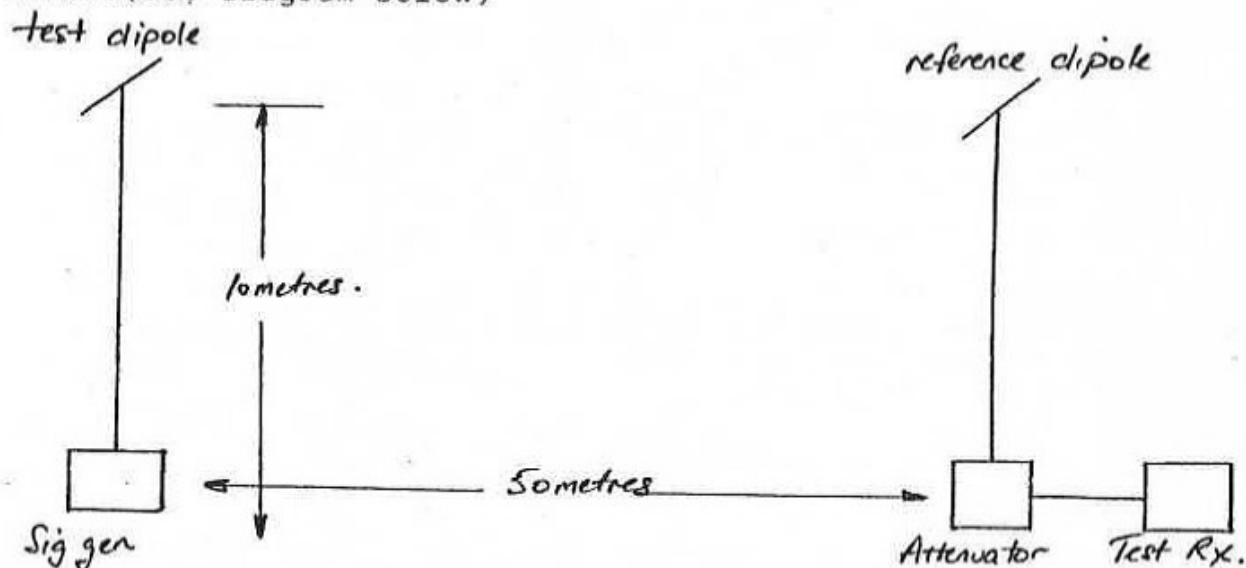
A \$300 picture tube will protect a 10c fuse by blowing first.

86/04 05

ANTENNA MEASURING DAY

On a Sunday around the middle of February a group of amateurs from B.A.R.G. and Geelong together with various helpers went to Max's VK3 YMW QTH for this interesting exercise.

Antennas of all shapes and sizes for 2MX and 70CM both of the home brew and commercial types were strewn around the place for testing. The test set up although simple comprised of test dipoles signal generator and a test receiver with inline stepped attenuator. (see diagram below)



After setting up the signal generator of 144.2megs with -30dbm output the attenuator was adjusted to give an S5 reading on the test receiver. In turn each antenna was placed on the receiver end and the attenuator adjusted to give S5 on the receiver. The difference between the two readings represented the gain or whatever of the antenna under test.

RESULTS FOR 2MX

1. Swan Yagi 9 elements	10dB	gain
2. Standard 5 element yagi (W.Wolf)	9dB	"
3. Phased array 20 element	13dB	"
4. ATN 13 element long yagi	12dB	"
5. Bowtie (VK3AEX)	2dB	"
6. Bowtie (VK3YMW)	8dB	"

It should be noted that "Toggles" bowtie had much less wire than "Max's" bowtie.

The reference dipole was changed to 432 megs and the receiver and attenuator adjusted to give S5.

86/04 06

RESULTS FOR 70 CM

1. ATN 11 element yagi	11dB	gain
2. ATN 16 element yagi	13dB	"
3. Microlink 12 element yagi	11dB	"
4. Lookalike ATN 16 element yagi	8dB	"

In almost every case the front to back ratio was in the order of 25 - 28 dB.

Due to the method of testing it is possible that some results do not measure up to the advertised claims of the supplier or manufacturer. Therefore the B.A.R.G. does not except any responsibility for the figures given in this report. It is also possible that a more sophisticated test setup would have attained better results.

Daryl VK3AQR managed to capture the days events on video with comentary by Dick VK3VU and technical descriptions from Charlie VK3BRZ. I hope this will be available for viewing in the near future which should be good entertainment.

It is proposed in the future to hold another antenna measuring day during which experiments can be performed to determine the effects of element spacing and length together with the addition of multiple reflectors.

Special thanks must go to Max and his XYL Evyonne for providing the venue and putting on a barbecue lunch.

Those present on the day were VK3's AQR, XEX, VU, YMW, AXH, DKJ, BRZ and helpers.

73's from Ian VK3AXH.

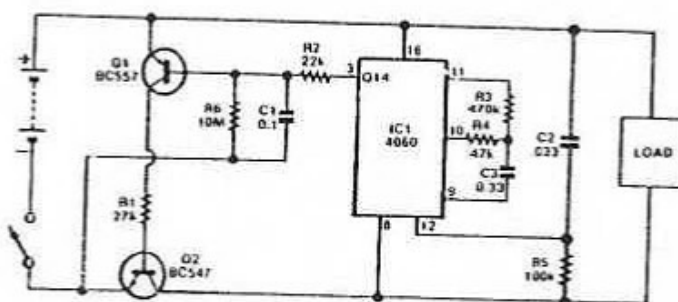
Automatic switch-off circuit saves batteries

Users of battery operated test equipment know how frustrating it is to find that batteries are flat because an instrument was not switched off. Here is a circuit which will automatically disconnect a load from a battery after a predetermined time. When the load is disconnected, the current is so small, less than a microamp, that it can be disregarded. To reconnect the load, the battery switch is turned off and then on again.

The part of the circuit which determines the "on" time is IC1 and its associated oscillator circuitry. The output of the oscillator is divided successively by two in each of the 14 stages of the counter. By pulling the reset line high, all outputs can be set low and this feature is used to ensure that the full number of divisions are carried out each time, thus ensuring quality of timing periods. Division restarts when the reset line goes low again.

When the switch is closed, current flows through the emitter-base junction of Q1 to charge C1 and in doing so, switches Q1 on momentarily. Q1 switches Q2 on and applies power to the load and to IC1. The reset line of IC1 is pulled high while C2 charges through R5 causing the counter outputs (Q14 in particular), to go low. With Q14 low, Q1 is maintained in a switched on condition, Q2 therefore remains switched on and the load continues to receive power.

With the component values shown, the oscillator oscillates about 30Hz. This is divided by 16,384 with the result that after about nine minutes, Q14 goes high and switches off Q1, which in turn switches off Q2. This disconnects the load from the battery.



None of the component values appear to be critical. R1 is sized to allow sufficient base current to flow to saturate Q2. For light current loads, a value of from 10 to 15 times the load resistance is of the right order.

Q2 must be large enough to carry the load current. Since power transistors tend to require relatively large base currents, a Darlington pair may be used. As drawn, the circuit will operate over a voltage range of about 4.5 to 15 volts. For higher voltages, the Vss connection of IC1 could be connected to load negative via a zener diode so that Vdd to Vss across the IC is no greater than 15V. R5 should be connected between pins eight and 12.

Longer timing periods could be obtained by increasing the capacitance of C3 and/or the values of R3 and R4 in accordance with the data book information on the IC.

(By Jim Parnell, ZL2APE, in "Break-In", January-February, 1980)

MULTIPLE INVERTED DIPOLES

Put a lot more antenna in
a lot less space at a lower cost

by Ed Noll W3FQJ

The single inverted dipole (inverted "vee") is a common transmitting antenna. It is easy to erect, low in cost and an effective RF radiator.

A limitation of the inverted dipole is the fact that it is basically a single-band antenna. If you are interested in operation on more than one band, two or more inverted dipoles with separate transmission lines are assumed. This assumption is not necessarily so. Dipoles for different bands can be attached to the same mounting structure and fed with a single transmission line. Here's how to do it with minimal interaction among dipoles.

Two-Dipole Arrangement. The inverted dipole is particularly attractive as a basic multiple dipole configuration. A typical arrangement is shown in Fig.

1 for a combined 40-meter and 80-meter dipole setup. Both dipoles are connected to a central dipole-to-coaxial cable connector or other type of insulator. This is fastened to the top of a mast or other support structure. Quarter-wavelength dipole elements are run from the connector down to four low supports (spaced 90° apart) for the inverted-vee configuration. Note that the 80-meter dipole connects to low supports that are at the 0 degree and 180 degree positions. The 40-meter inverted dipole is mounted at right angles to the 80-meter inverted dipole.

The maximum voltage points of the antennas are well separated and there is minimum interaction between the two dipoles. Such interaction is difficult to avoid when the antennas are mounted

in the same plane. At the resonant frequencies, the inverted dipoles display the characteristic 50 to 72-ohm impedances. On 40-meters, the 80-meter dipole has a high impedance and does not affect 40-meter operation. Likewise, the 40-meter antenna displays a high impedance at the resonant frequency of the 80-meter dipole.

A single transmission line connects the two-band antenna to the transmitter. Impedance match and operation are the same as would be obtained if there were two entirely separate dipoles and transmission lines.

Dipole Dimensions. Typical dimensions for the crossed, two-band dipole configuration are given in Fig. 1 for 40-meter and 80-meter phone band operation. It should be mentioned that the basic configuration can be used for either inverted-vee or straight horizontal dipole construction. Obviously, for strictly horizontal dipole construction, additional masts are required. The advantage of the inverted dipole arrangement is that the antenna ends are at a low height and can be held by short poles or fence posts. An additional advantage of the inverted dipole construction is that it is easy to trim antenna length to obtain a precise resonant frequency because each element can be let down conveniently.

Quite often, the author cuts the antenna for the phone portion of a given band. For CW operation, short lengths of wire can be clipped or wrapped around the antenna ends to resonate the antenna in the CW segment of a given band.

Inasmuch as the elements go off at 90-degree intervals, the antenna's quar-

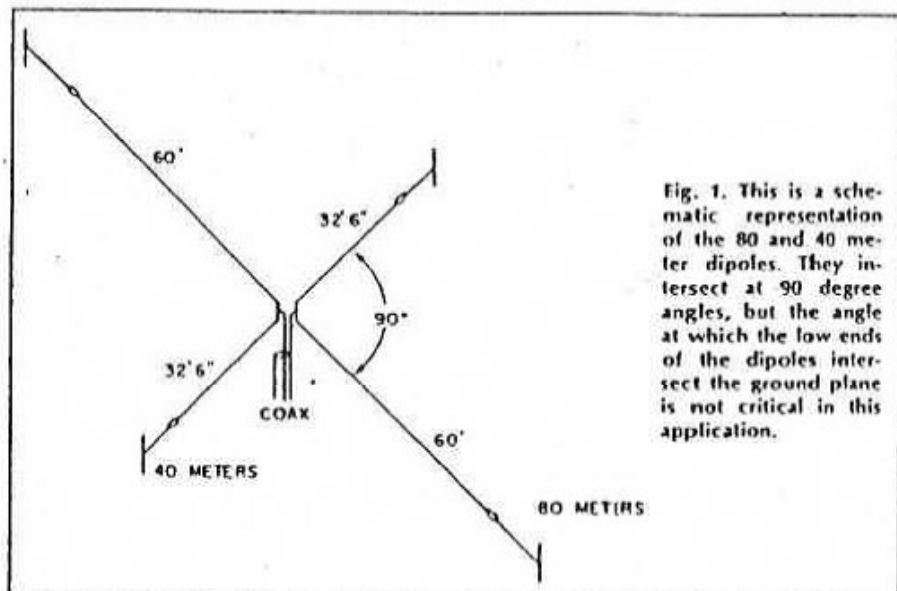


Fig. 1. This is a schematic representation of the 80 and 40 meter dipoles. They intersect at 90 degree angles, but the angle at which the low ends of the dipoles intersect the ground plane is not critical in this application.

ter-wave segments themselves act as guy wires for the high center mast in an inverted-vee configuration. No additional guy wires are required and therefore interaction among radiating elements and guy wires is eliminated.

The length of each quarter-wave segment can be calculated using the simple equation:

$$\text{Quarter-wavelength elements} = \frac{234}{f}$$

The calculations for 40 and 80-meter phone operation are:

$$40\text{-meter quarter wavelength} =$$

$$\frac{234}{3.9} = 60\text{-feet}$$

$$80\text{-meter quarter wavelength} =$$

$$\frac{234}{7.2} = 32.5\text{-feet}$$

Table 1 provides dimensions for cutting dipole segments for Novice and SSB sections of some of the more popular Amateur radio bands.

Two-Section, Tri-Band Antenna. The author constructed the antenna of Fig. 2 for three-band phone operation. Basically it is a 20-meter and 40-meter configuration of crossed, inverted-vee dipoles with a facility for adding length to the 40-meter antenna to obtain 15-meter phone segment resonance. The 20-meter quarter-wave elements are 16.5-feet in length. Resonance was at 14.2 megaHertz. The 40-meter inverted dipole was first cut for 32-feet, 6-inches. However, the resonant frequency was a bit low. Consequently three inches were cut off each end, and resonance was then found to be near 7.2 MHz.

After some experimentation, it was found that if 13-inches were clipped on to the ends of the 40-meter dipole, a three-quarter wavelength resonance could be obtained at approximately 21.3 megaHertz. This 13-inches was the overall length of an alligator clip plus a short piece of antenna wire. In the inverted configuration, it is very easy to let down each end of the 40-meter antenna to clip on the 15-meter addition whenever operation is desired on that band.

If you have an antenna tuner, the 13-inch extensions are not required. The tuner will permit you to match your transmitter on 15-meters, and there will be no significant deterioration in antenna system performance. This arrangement provides a simple, good-performance and low-cost three-band antenna system.

Novice Tri-Bander. Many Novice Amateurs must operate on a low budget and in limited space for antenna erection. Often they are confined to single

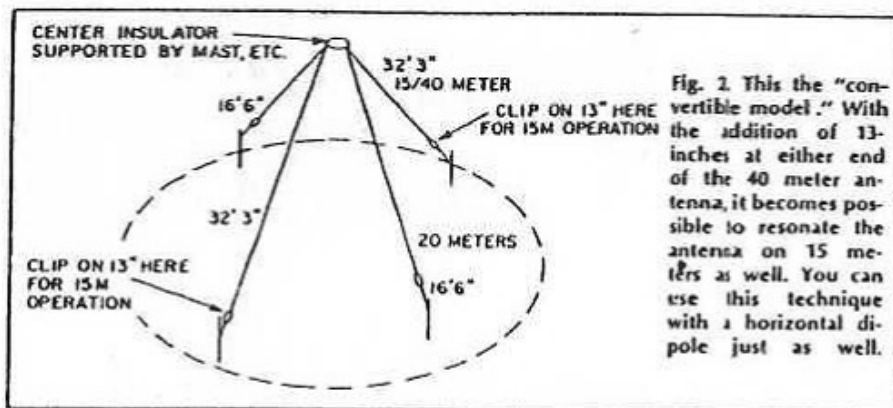


Fig. 2 This the "convertible model." With the addition of 13-inches at either end of the 40 meter antenna, it becomes possible to resonate the antenna on 15 meters as well. You can use this technique with a horizontal dipole just as well.

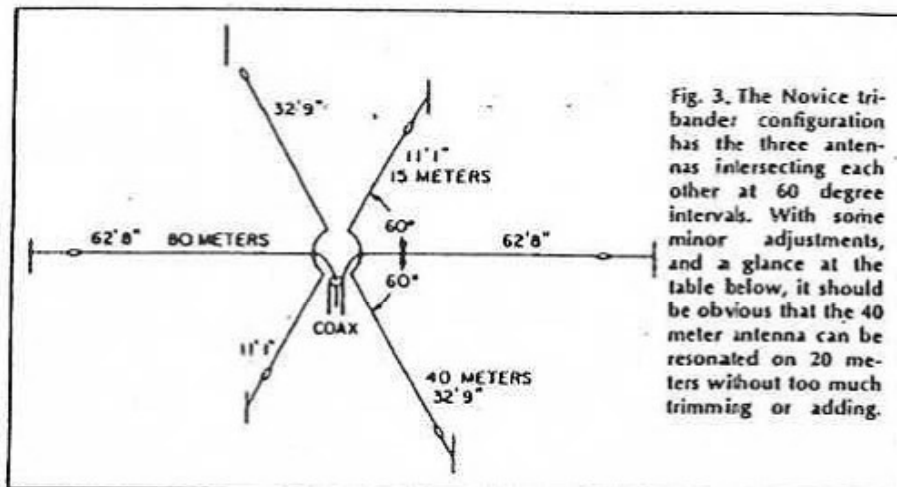


Fig. 3. The Novice tri-bander configuration has the three antennas intersecting each other at 60 degree intervals. With some minor adjustments, and a glance at the table below, it should be obvious that the 40 meter antenna can be resonated on 20 meters without too much trimming or adding.

TABLE 1 DIPOLE DIMENSIONS

Band	Mode	Length in Feet
80	CW	62.80
80	Phone	60.00
40	CW	32.85
40	Phone	32.50
20	Phone	16.50
15	CW	11.06
15	Phone	11.00
10	CW	8.30
10	Phone	8.20

Note: CW dimensions given are for Novice class band segments. For higher class CW band dimensions, refer to the formula in the text.

This table, as well as the formula given in the text, will allow you to construct inverted dipole antennas for any of the present ham bands you might wish to operate on. Remember to make your initial wire cuts a bit on the long side to allow for fine tuning after antenna is erected in operating position.

band operation. The arrangement of Fig. 3, using the inverted-vee construction, can permit three-band operation and with only a single supporting mast. Metal fence posts can be used to hold down the six antenna elements.

Adequate isolation among the three antennas is obtained by maintaining 60-degree spacing among dipoles as shown in Fig. 3. Dimensions are given for frequencies that are approximately centered in the three Novice bands on 15, 40 and 80-meters. Again, the antenna elements themselves serve as guying for the center mast. Some trimming of an-

tenna elements may be necessary if precise resonant frequencies are desired.

Conclusion. In summary, spaced inverted dipoles with a common center connection to the transmission line permit adequate multiband operation. The system performs with a single transmission line and no tuner is required if the elements are cut carefully and perhaps trimmed if the SWR appears to be a trifle too high.

The spacing of the antenna elements minimizes interaction among dipoles and therefore matching problems are reduced or eliminated.

Amateur Satellite Communications

Conducted By
Vern "Rip" Riportella, WA2LOQ
P.O. Box 177, Warwick, NY 10990

Working OSCAR—The Basics

The fascinating thing about Amateur Radio satellites is ... well, quite frankly, there's not just one thing but rather an array of features that make working OSCAR today among Amateur Radio's most fascinating, challenging and rewarding activities. Last time (June 1985 QST), we highlighted a few of the many activities and modes to be found on OSCAR. Now let's look a little closer at what it takes to get started using OSCAR satellites.

There are four basic topics you'll need to be familiar with to succeed on OSCAR:

- 1) When and where to point your antenna (tracking).
- 2) Basic transponder characteristics (frequencies and modes).
- 3) Basic station characteristics (transmit power, receive sensitivity).
- 4) Basic operating practice (band plan, protocol, courtesies).

First, you need to know when and where to look for the satellite (tracking). In essence, you need to know when the satellite you're interested in working is within view of your QTH. If you've got one of the new, little personal computers, AMSAT has a tracking program that makes (tracking) life very straightforward and easy. A review of the ARRL's *Satellite Experimenter's Handbook* (SEH) is recommended for a basic understanding of what's going on with the satellite—that is, its motion around the earth. But, just as you don't need to understand hydraulics to use the automatic transmission in your car, you don't need to understand Kepler's equations to use a computer to track OSCAR. But it helps conceptually to have a basic grasp of the motion of the satellites across the sky.

Several manual means of satellite tracking are also available. These aids are available from ARRL (OSCARLOCATOR), ZRO Technical Devices (Satellite, Satellabe), and others.¹ The manual devices resemble circular slide rules with maps and various curves on them. When you enter a reference time and position for a certain satellite, the locators will tell you where the same satellite is at the time you select. Significantly, it will also tell you which way to point your antennas (azimuth and elevation) to zoom in on the OSCAR you want to work. Although the manual tracking aids or locators lack the accuracy, speed and general pizzazz of computer tracking methods, they are inexpensive and fairly easy to learn to use.

On the other hand, our first tracking computer was a Sinclair ZX-81, which I purchased for \$29.95 plus an extra \$10 for more memory. I got the AMS-81 tracking program from the AMSAT Software Exchange for \$10 and had an old TV monitor just perfect for the job.² So for \$50 and no sweat at all, I had a first-rate tracking computer system that gave me high accuracy and did nothing but plot orbits for me.

Second, you need to know what frequency to transmit on and what frequency to listen on. The popular current mode of operation on AMSAT-OSCAR 10 (AO-10) is called

Table 1
OSCAR Operating Modes

Mode	Uplink Band	Downlink Band
A	2 m (145 MHz)	10 m (29 MHz)
B	70 cm (435 MHz)	2 m (145 MHz)
L	24 cm (1269 MHz)	70 cm (436 MHz)
S	70 cm (436 MHz)	13 cm (2401 MHz)
J	2 m (145 MHz)	70 cm (435 MHz)
LJ	2 m/23 cm	70 cm
K	15 m	10 m

Mode B. That means you transmit your signal to the satellite (uplink) in the vicinity of 435.1 MHz, and you listen for your signal (downlink) from the satellite on about 145.9 MHz. Moreover, since you are operating crossband, you operate full duplex—that is, you transmit and receive concurrently. Why crossband? The hardware required to provide sufficient isolation for in-band, full-duplex operation (similar to a terrestrial FM repeater) would be too massive to fit aboard a cramped-satellite. So the traditional satellite solution is to have cross-band, full-duplex operation. OSCAR satellite modes are listed in Table 1. A Mode B band-plan chart is shown in *The 1985 ARRL Handbook*, page 23-6.³

Third, you need to have a basic understanding of how to establish a station to use AO-10 in the mode you choose. You will need information to help you decide what equipment need be added to your existing shack to make it OSCAR-compatible.

Fourth and finally, you need to be familiar with the operating practice and operating schedule for the satellites and modes you choose to operate. Operating schedules can be learned from AMSAT newsletters and nets.⁴

Operating practice can be learned from many reference sources, including the ARRL's *SEH* and AMSAT's beginner's manual.

Each of these topics will be covered in detail in future columns. Meanwhile, here's something you can do to get started right away. Simply take the first small step: Listen for AO-10. Make an attempt to hear AO-10 on its next available pass. All you need is a 2-meter all-mode receiver and antenna. Having a 2-meter preamp is not absolutely essential, but it makes a very, very significant improvement. Borrow or purchase one if you can. Then write or call the AMSAT Area Coordinator in your region and ask for a copy of the latest orbital predictions for your area. (You should offer to contribute to the postage costs.) Ask the Area Coordinator to help you point your beam in the right direction if AO-10 is in view then. Check to see if it's in Mode B or Mode L. You want Mode B if you want to listen to the 2-meter downlink. If you don't know who your Area Coordinator is, you can find out by calling toll-free to the Chief Area Coordinator, Jack Somers, WA6VGS, at 1-800-421-6631.

If you're lucky, the Area Coordinator will be close by, and a short drive to his QTH will result in your acquiring the key tracking data for your area. The computer-tracking printouts will tell you the azimuth and elevation to point your antenna to track AO-10 for the next several days. Most newcomers don't have an elevation rotor. In that case, you may have some difficulty hearing AO-10 when it's above 20- or 30-degree elevation. As a start, you might select a listening period during which AO-10 is within 20 degrees or so of the horizon.

Start out by listening to the general beacon on 145.810 MHz. The frequency may be slightly different because of the Doppler shift

THIS SPACE IS RESERVED
FOR A SPECIAL REASON.
I DIDN'T HAVE ANYTHING
SMALL ENOUGH TO FIT INTO IT.

REN VK3XOA
EDITOR.

effect exhibited by the fast-moving satellite. Use your receiver's USB or CW mode to listen. You may hear a buzzing sound, which is special phase-shift-keyed (PSK) telemetry, or you may catch the CW or RTTY bulletins, depending on exactly when you listen. The beacon changes mode in recurring half-hour patterns (beacons will be detailed in a subsequent column).'

Chances are, if you don't use a preamplifier, you will hear the beacon weakly or not at all. A good preamp is really very helpful, especially if your antenna is not terribly good or is in poor repair. Also, if you have a long run of transmission line between your antenna and your rig, the preamp will help most if mounted at the antenna and remotely powered from the shack. For a short test, you might consider battery powering the preamp and locating it at the antenna, just to see how well it works that way.

In any case, try tuning up to center band, 145.900 MHz. If the transponder is on, you should hear dozens of CW and SSB signals in the transponder passband. Use the USB position to receive. The convention on all the transponders is to use an uplink mode that produces USB on the downlink. Since AO-10 Mode B is an inverting linear transponder, LSB on the uplink results in USB on the downlink.

If your 2-meter station consists of a 2-meter beam with at least 10-dB gain and you have

a preamp, if the transponder is on, you'll be hearing lots of activity from local as well as DX stations. And at this point, you will have linked yourself for the first time into the worldwide network of satellite users.

But if you're disappointed in what appear to be weak signals on the 2-meter downlink, take heart. There really is a lot of 2-meter signal there, but your everyday, off-the-shelf 2-meter rig may need some help with the AO-10 signal. Most of the 2-meter radios sold have only marginal receiver front ends and really perk up with the addition of a new GaAsFET preamp out front. "Wow," you'll exclaim, "What a difference!"

It is often helpful to have a standard frame of reference or benchmark to determine just how well you are hearing on 2 meters. To provide just such a benchmark, AMSAT began a series of on-the-satellite tests last spring. The tests are similar to the ARRL's frequency-measurement tests (FMT), except AMSAT's test works in the amplitude domain while ARRL's obviously works the frequency domain. AMSAT's receive sensitivity tests offer a convenient way to establish how well your station is performing both in an absolute sense and compared to other operators. For those who demonstrate various levels of proficiency on the test, an AMSAT Technical Achievement Award, called the ZRO Memorial Station Engineering Award, is available. The test

frequency is 145.840, and the next scheduled event will be later this month.'

First steps in a new endeavor are often long remembered. Many new OSCAR enthusiasts assert that their first OSCAR QSO was even more exciting than their first-ever QSO. Of course, you'll have to find that out for yourself. Meanwhile, your portable ionosphere whirs overhead, awaiting your signal. Once you hear OSCAR's beckoning call, you'll be hard pressed to resist for long!

Next time, we'll take a look at the antennas used in OSCAR work.

Notes

*ZRO Technical Devices, P.O. Box 11, Endicott, NY 13760.

*AMSAT Software Exchange, P.O. Box 27, Washington, DC 20044.

*A copy of the Mode B band plan is available free for a business-sized s.a.s.e. to the author at the address at the top of this column.

*See notes to the June 1985 column for nets and newsletter information.

*A free handout showing the general beacon program schedule is available from this column conductor for a business-sized s.a.s.e.

*Ads for 2-meter preamps are found in this QST. Refer to the ad section.

*A free information booklet about receive sensitivity and the AMSAT ZRO-Memorial Technical Achievement award is available for a business-sized s.a.s.e. with 39¢ postage affixed. Request from this column conductor at address above.

REK

COMMUNICATION

The Chief Fire Officer issued the following directive to the Deputy-Chief Fire Officer:

"Tomorrow evening at approx. 2000 hours Haley's Comet will be visible in this area, an event which occurs once in every seventy-five years. Have the men parade in the drill yard in working clothes and I will explain this rare phenomenon to them. In case of rain, we will not be able to see anything, so assemble the men in the Engine room and I will show them a film of it."

Deputy-Chief's instruction to the Superintendent:

"By order of the Chief Fire Officer, tomorrow at 2000 hours Haley's Comet will appear above the drill yard. If it rains, fall the men out in working clothes, then move to the engine room where this rare phenomenon will take place, something which occurs once in every seventy-five years."

Superintendent's instruction to the District Officer:

"By order of the Chief Fire Officer, who will be in working clothes tomorrow evening, the phenomenal Haley's Comet will appear in the engine room at 2000 hours. In case of rain in the drill yard, the Chief Fire Officer will give another order, something which occurs every seventy-five years."

District Officer's instruction to Station Officer:

"Tomorrow at 2000 hours the Chief Fire Officer will appear in the engine room with Haley's Comet, something which occurs once every seventy-five years. If it rains, the Chief Fire Officer will order the Comet into the drill yard."

Station Officer's instructions to the Firefighters:

"When it rains tomorrow at 2000 hours, the phenomenal seventy-five-year-old Superintendent Haley, accompanied by the Chief Fire Officer, will drive his Comet through the engine room and into the drill yard while wearing his working clothes."

The moral of this story is "The verbal direction is not worth the paper it's not written on."

86/04 10

Wireless Institute of Australia Victorian Division

86/04

11



News Release

March, 1986.

The WIA is closely watching new electronic consumer products which could cause electro-magnetic compatibility (EMC) problems for the Amateur Radio Service. Devices of concern include cordless telephones, and ad-on items for video cassette recorders, television receivers and computers.

Help a young boy or girl consolidate their interest in technology or communication by signing them up as a student grade member of the WIA, Victorian Division.

Membership has been reduced to \$15 a year and includes a monthly copy of Amateur Radio magazine.

The Amateur Operator's Handbook is being revised to take into account many changes affecting the Amateur Radio Service since the last handbook was issued in 1978.

The updating procedure will also reflect the Radiocommunications Act.

The WIA is working with DOC on the new handbook, which was hoped to be released late this year or early 1987.

A national amateur radio event for Australia's bicentenary is planned for Canberra in April 1988.

The WIA Australian Capital Territory Division is considering various activities to be included in its Communicon - Communications Convention.

The WIA now offers a free disposals equipment for sale and wanted service on its weekly Sunday morning broadcast.

Inquiries about this service should be directed to the Secretary, WIA Victorian Division, 412 Brunswick Street, Fitzroy, 3065, Victoria.

86/04 12

THE SUN SWINGS LOW IN WESTERN SKIES
 THE BIRDS WING HOME IN BROKEN LINES.
 THE FEEL OF SPRING IS IN THE AIR
 GOSH, LIFE IS GRAND WITHOUT A CARE.

THIS IS THE TIME TO WORK OUTDOORS
 MOWING LAWNS, AND OTHER CHAWS.
 BUT WORK CAN WAIT, THIS TIME OF DAY
 AS SOMETHING ELSE DRAWS ME AWAY.

IT IS THE LURE OF THE SHACK
 SKIP FROM EUROPE THICK AS FLACK.
 I TURN MY BACK ON GOLDEN SKIES
 AND LOOK UP AT MY BEAM AND WIRES.
 I'LL SOON BE PUSHING RF OUT
 I'LL GIVE A FRIEND AN EXTRA SHOUT.

MY WIFE WALKS IN, AND SHAKES HER HEAD
 I THINK THIS ROOM SHOULD HAVE A BED.
 SHE GOES ON OUT WITH KNOWING SMILE
 TO MOW THE LAWNS OR FIX THAT TILE.

I START TO CHAT TO FAR FLUNG LANDS
 CONDITIONS RIGHT, WIDE OPEN BANDS.
 THE MOWER STARTS, A MIGHTY ROAR
 RIGHT OUTSIDE MY FLAMIN' DOOR.

I GIVE A SHOUT, A FEW CHOICE WORDS
 THAT FALL ON NAUGHT BUT THE BIRDS.
 MY WIFE CAN'T HEAR, I RANT AND RAVE
 TURN THAT OFF, I CANT TALK TO DAVE.

I GO ON BACK INTO THE SHACK
 AND CALL TO DAVE, WHO'S WAY OUT BACK.
 DAVE COMES BACK AND STARTS TO SAY,
 YOU'LL NEVER LIVE ANOTHER DAY,
 HALF THE WORLD WAS IN THAT ACT
 THEY THINK THAT YOU MAY HAVE NO TACT.

Words of wisdom by Cliff VK3IP/AF

OR THE DAY I FORGOT TO TURN THE MIC. OFF.

86/04 13

YOU'VE GONE AND LEFT YOUR VOX SWITCH ON,
YOU'VE BEEN HEARD I GUESS, FROM PERTH TO BONN.
I SLINK AWAY A BROKEN MAN, I FEEL A CUR
AND NOT A HAM

THE CLOUDS ARE ETCHED WITH GOLDEN LACE,
DARE I GO BACK TO TRY SAVE FACE.
THE SKIP SO GOOD, CONDITIONS GREAT
TO LINGER LONG WILL BE TO LATE.

BACK I GO, IT'S HUMBLE PIE
TO POUR RF INTO THE SKY.
MY FELLOW HAM HE CALLS TO ME
NOT ONE, NOT TWO, BUT EVEN THREE.

SO NOW I KNOW MY UNCHOICE WORDS,
HAVE FALLEN ON NAUGHT
BUT THE BIRDS..

WE HAVE WHAT YOU NEED AT...

WECAM
Communications
Sales & Service
(053)392808



YAESU



ICOM and others

11 Malmsbury Str. Wendouree 3355--

CALL US OR SEE BRIAN STARES, VK3 KQB

*COAX, Rotator and L.T. Cable, Plugs and connectors, Transistors
and IC's, Aerials and assorted parts always in stock. Call for
prices and information.*

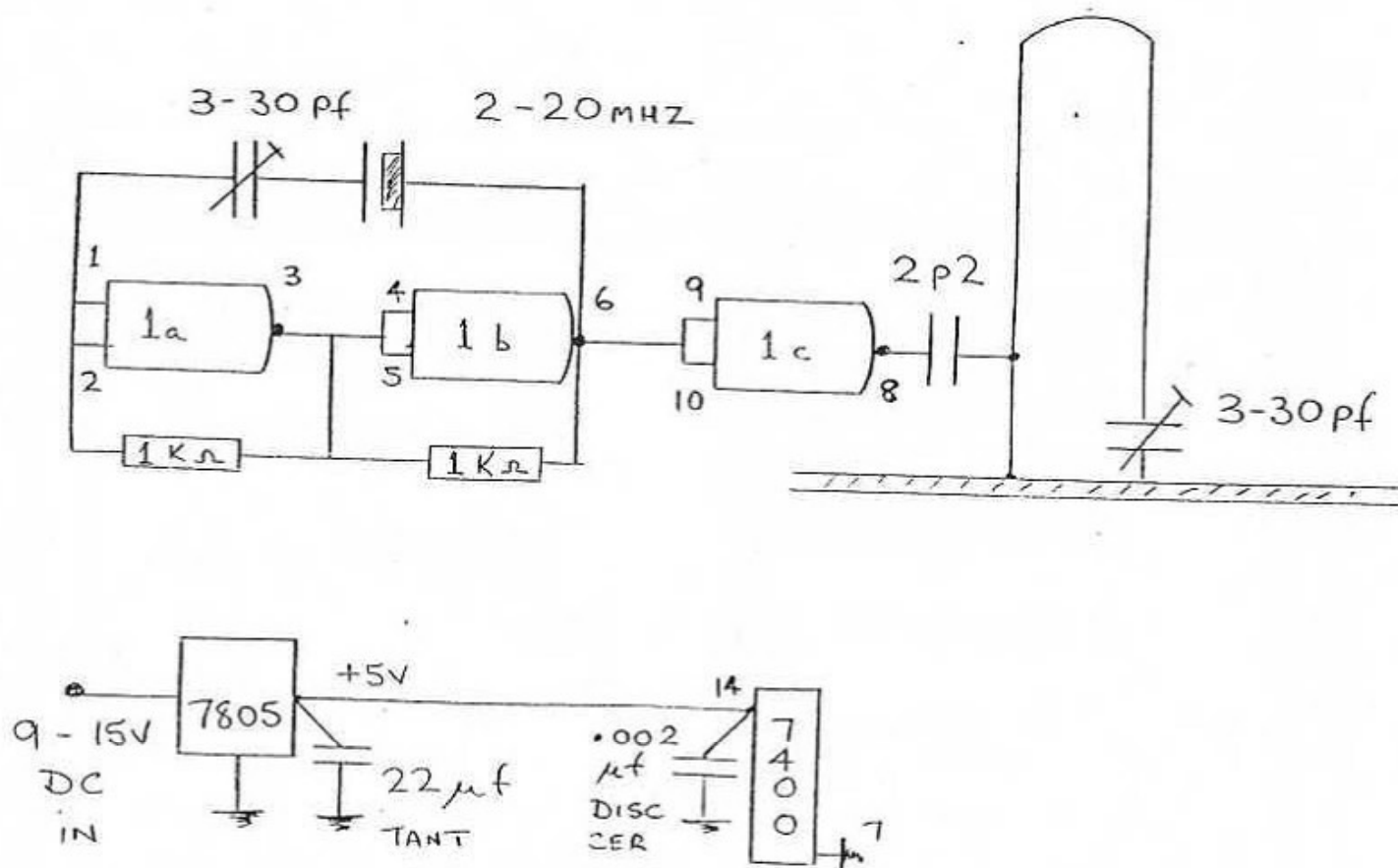
EVERYTHING FROM A TO Z IN ELECTRONICS

86/04 14

Just another Signal Source ?

John VK2BHO

I constructed this simple source some time ago and have found it very useful for a number of tests including antenna adjustments, receiver adjustments, and in one instance when coupled to an antenna as a cw transmitter over approx 1 Km, all at 2 meters. Construction is surface mounted on copper clad glass board, using point to point and self supporting components, the 7400 is placed directly on the board with the pins uppermost, no socket and soldering directly to IC pins. At 2meters the output loop is 100mm long spaced 15mm and tapped at 25mm ie. approx 200mm of 18g. Crystal and trimmer must be mounted securely if frequency stability is required at vhf. When using a 18Mhz crystal signal output is considerable and i expect useable signal would be produced at 70cm and possibly 1296Mhz. This is the basic, dream up your own uses

FROM THE PROPAGATOR

86/04 15

Heard on the Ballarat repeater over the field day weekend.

OM-1 "... and so, did you work many on 2M. sideband?
OM-2 No, not much. Talked to ZL this morning though.
OM-1 ZL; Well done mate, must have been sporadic-E
or something.
OM-2 No, No, not ZL-land. I worked VK3ZL.

Maggie VK3NQQ

I PASSED I PASSED I PASSED

Yes, the AOCF theory examination is over, finished.
My thanks to Bob, VK3BNC, for the coaching sessions.
Thanks also to Fred, VK3KQF, for the study materials.
Right now, it's back to the desk to improve my CW for the
exam in May. See you soon on 20 meters.

Maggie VK3NQQ

To my friends on the net...

On Thursday, 27th February, I invited 12 year old Chris
into the shack for some shortwave listening.
He heard contacts between VK5 and WØ land, two YL's in VK4
and foreign language broadcasts.
Then I introduced him to the BARG net. Everyone had
something encouraging to say. Each man on the net mentioned
his own special area of interest in amateur radio. Chris'
eyes grew wider and wider. I think that he was overwhelmed
by the warmth of the response. Also, after listening
to other people talk to each other, here were people
talking to him.
So, my thanks to all of you for the splendid welcome
you gave.

73, Maggie VK3NQQ

36/04 16

.....

.....